P845 Evaluation of Pentoxifylline Treatment of Sepsis of Premature Infants in Double Blind Randomized, Prospective Study

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Objectives: 1-to evaluate the influence of pentoxifylline (PTXF) treatment on mortality rate in the course of sepsis; 2-to estimate the elevation of tumor necrosis-alpha (TNF) interleukine-1 (IL-1) and interleukine-6 (IL-6) in relation to clinical symptoms; 3- to compare the plasma TNF, IL-1 and IL-6 level between the infants.

Methods: Prematurely delivered infants with diagnosis of sepsis were randomly assigned to receive PTXF (ptxf group) or saline (placebo group) by means of permuted block randomization scheme. The randomization was calculated for a sample size of 100 infants (two groups of 50 subjects). These two groups were comparable according to birth weight, gestational age and Apgarscore. Both groups were subjected to the same conventional therapy. The PTXF (Pentiline, Krka, Slovenia) was given intravenously in a dose of 5 mg/kg per h for 6 h. The first infusion of PTXF or saline started about 30 min. before antibiotics were administered. Identical infusions were repeated on the following five days of therapy. TNF, IL-1 and IL-6 were determined by immuno-enzymetric tests (Elisa, Medgenix, Fleurus, Belgium). Blood samples were collected from newborns: on the 1st, 3rd and 6th day of treatment before and after the PTXF or saline infusion.

Results: There were a statistically significantly lower plasma levels of TNF and IL-6 in the ptxf group on the third day of therapy when compared to the results obtained in placebo group (TNF-mean: 94 pg/ml, vs 347 pg/ml; IL-6-mean: 27.12 pg/ml vs 168.3 pg/ml); 2 of 8 infants with signs of shock in placebo group survived, whereas only 1 of 6 respective infants in ptxf group died ($p < 0.03$).

Conclusions: PTXF limits synthesis of TNF and IL-6 what may have beneficial influence on the prognosis in sepsis of premature infants.

P846 Thyroid Functions in Patients With Sepsis

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Objectives: To evaluate thyroid functions in patients with sepsis.

Methods: This study included 49 patients over 17 year old and diagnosed as sepsis, sepsis syndrome or septic shock. Within 24 hour on the diagnosis of sepsis, thyroid function tests were performed. The tests were repeated in the recovered patients at 14th day.

Results: Etiological agent was isolated in 35 (71.4%) patients (57.1% gram negative bacteria, 34.3% gram positive bacteria and 8.6% polymicrobial). Fourteen (28.6%) patients died. Sepsis score was significantly higher in the patients who died (18.6 ± 4.7) than in the patients who recovered (14.5 ± 4.1) ($p < 0.01$). Mean serum free triiodothyronine (ST3) level was 0.72 ± 0.75 pg/ml, mean serum free thyroxine (ST4) level was 0.83 ± 0.41 ng/dl, mean serum total triiodothyronine (TT3) level was 35.44 ± 22.87 ng/dl and mean serum total thyroxine (TT4) level was 4.95 ± 1.95 μg/dl in the patients who recovered and mean serum ST3 level was 0.33 ± 0.37 pg/ml, mean ST4 level was 0.42 ± 0.34 ng/dl, mean TT3 level was 19.18 ± 12.04 ng/dl and mean TT4 level was 2.69 ± 2.04 μg/dl in the patients who died. The difference between two groups was significant. Mean thyroid stimulating hormone (TSH) level was 1.59 ± 1.54 μIU/dl in the patients who recovered and 1.78 ± 3.07 μIU/dl in the patients who died. Within 14th day on the diagnosis of sepsis, thyroid functions tests was significantly improved in the patients who recovered.

Conclusion: This study shows that there is a strong correlation between mortality and the decrease in serum TT4 and euthyroid sick syndrome developed in the patients with sepsis.

Mediators of inflammation

P847 TNF-α Secretion by Human Monocytes Stimulated with Yeast Form of *Candida albicans*: Influence of Serum Opsonins

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Objectives: This study was designed to investigate the role of serum opsonins in the mechanism of production of TNF-α by human monocytes upon stimulation with yeast form of *C. albicans*.

Methods: Heat killed *C. albicans* wild strain was opsonized with medium only, fresh or heat-inactivated human pooled serum (HPS), C1 and C3 depleted serum, fraction of HPS concentrated at different molecular weight and HPS supplemented with either 5 or 25 mg/ml of D-mannose.

Results: Non-opsonized *C. albicans* induced the production of low amount of cytokines. Opsonization of *C. albicans* in 10% HPS led to a significant enhancement of TNF-α secretion. Heat inactivation of serum as well as C1 and C3 serum depletion, did not reduce cytokine release. The amount of TNF-α release after opsonization with serum fraction, was significantly higher with serum filtrates having a Molecular Weight cut-off above 50.000 Da. The presence of D-mannose enriched HPS reduced in all instances the release of TNF-α from monocytes.

Conclusions: *C. albicans* induces the secretion of TNF-α by human monocytes. The release of TNF-α is enhanced by the presence of heat stable serum factors, but not by the presence of heat labile serum opsonins such as complement. Among serum opsonins, mannan binding protein seems to be involved in the serum mediated enhancement of TNF-α release.

P848 G-CSF (Filgrastim) Treatment of Volunteers Increases Blood Bactericidal Activity but Decreases Inflammatory Responses

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Objectives: To determine the immunomodulation caused by treatment of healthy volunteers with G-CSF.

Methods: Two groups of six male healthy volunteers (70–90 kg) were double-blindly injected s.c. 300 μg G-CSF (Figrastim, Amgen) or solvent placebo for 12d. Blood was withdrawn on days 1 (pretreatment), 2, 3, 5, 8 and 12 to assess whole blood bactericidal activity to *Salmonella abortus equi* as well as blood cytokine response to *S. abortus equi* endotoxin (LPS).

Results: Treatment with G-CSF was well tolerated by the volunteers. Neutrophilic granulocyte counts increased ten-fold in the treatment group. An initial amount of 10^5 CFU *Salmonella* added to 20% whole blood from untreated donors expanded to 10^8 CFU within 24 h. In contrast, in blood from G-CSF treated subjects, only 10^4 to 10^5 CFU were found at any day of study.

When in a similar approach, whole blood was incubated in the presence of LPS, the release of the pro-inflammatory cytokines TNFα and IFNγ was significantly reduced in the G-CSF treat-

ment group: IFNγ release in response to LPS was reduced by 70% from day 2 to 12. TNF formation by monocytes, however, became more pronounced during the treatment course (30% at day 2, 80% at day 12).

Conclusions: G-CSF is characterized by anti-infectious as well as anti-inflammatory properties without evidence of tachyphylaxis thus allowing sustained treatment. This unique combination of pharmacodynamic properties seems suitable for experimental therapies for non-neutropenic infection, sepsis prophylaxis and HIV.

P849 Interleukin 6 Activity in Children with Mumps Meningitis

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Objectives: Interleukin 6 (IL-6) is multipotent cytokine that acts in a network of factors directing the inflammatory reaction of purulent and aseptic meningitis. Concentrations of IL-6 in cerebrospinal fluid (CSF) and serum of children with mumps meningitis were determined and correlations were sought with other indices of inflammation.

Methods: Twenty patients of ages between 1.5 to 10 years were studied. In all cases mumps-specific serum IgM and IgG has been found by using immunofluorescence tests (BIOS). We used a monoclonal antibody ELISA (Immunotech) to test IL-6 in CSF and serum at admission and 7–10 days later.

Results: Increased levels of IL-6 were detected in the CSF of all patients. At admission mean values were 429.88 pg/ml (range 32.57–1437.17, median 218.53 pg/ml) and 7–10 days later 2.88 pg/ml (range 1.65–6.08, median 2.74 pg/ml). On the contrary Il-6 in serum was detected at mean concentration 300 pg/ml (range 0.0–1663.9, median 28.6 pg/ml) at admission and at mean concentration 332 pg/ml (range 0–1611.0, median 7.38 pg/ml) after 7–10 days. There were no correlations between IL 6 in CSF and in serum. Concentration of CSF IL-6 correlated positive with polymorphonuclear cells both in CSF ($r = 0.47$, $p. = 0.037$) and in blood ($r = 0.58$, $p. = 0.007$), and also with CSF protein concentration ($r = 0.46$, $p = 0.027$).

Conclusions: These results showed that in patients with mumps meningitis the IL-6 is differently released in the intrathecal space and in serum. IL-6 plays an important role in the pathogenesis and inflammatory response in mumps.

P850 Role of Cytokines in Patients with Brucellosis

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Brucella is a facultative intracellular pathogen that tends to persist within resident tissue macrophages and is eliminated by immunologically activated macrophages. In fact, resistance to intracellular bacteria depends on successful interaction between specifically sensitized T lymphocytes and macrophages. A poor macrophage response may cause less immunologic response in brucellosis.

Objectives: The aim of this work is to evaluate the in vivo role of IL-10, TNF-α, IL-6, and IL-12 in patients with brucellosis, to correlate their levels with clinical and analytical parameters of diseases severity and to realize a potential polarization to TH1 or TH2 immune response.

Methods: We analyzed data derived from 39 patients with acute brucellosis, of these 21 were children (13 males), of a median age of 6.8 years (range, 2 to 14 years) and 18 adults (9 males) of a median age of 38 years (range, 15 to 75 years). The diagnosis was estabilished by the serum agglutination test. Serum specimen were obtained before the start of treatment and 2 months after the end of therapy. IL-10, TNF-α, IL-6, and IL-12 levels were determined by commercial ELISAs (R&D Systems, Space Import-Export Milano).

Results: Before treatment the majority of patients had increased levels of IL-10, TNF-α and IL-6, while after recovery only increased levels of IL-12 were detected. Not statistically significative differences of the levels of the cytokines considered were observed among adults and children.

Conclusions: The results confirm that during the active phase of the disease a marked predominance of TH2 reponse, while after the recovery a TH1 response is prevalent.

P851 Cytokine Regulation of Immunogenesis at Brucellosis

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Objectives: The lymphokines synthesis by cells of the immune system of mice immunized with killed microbial cells of *Brucella abortus 19-BA* was investigated.

Methods: A research of the helper effect of induced immunoregulatory cells conducted in the system of adoptive transfer. IL-2-activity determined on increase of the proliferation of Con A-activated blasts. IL-4- and IL-5-activity determined on the comitogenic effect in respect to the proliferation of a cleared population of B-lymphocytes in conditions of their stimulation by rabbit anti-mouse immunoglobulins or suboptimal doze of dextran-sulphate accordingly.

Results: The transfer of cleared T-cells from immunized to intact mice provides expressed helper effect in respect to immunization with an heterologous antigen. In the culture supernatants of splenocytes of the immunized mice as at primary, and secondary immune response a high degree of activity IL-2 is determined. At the primary stimulation with *B. abortus 19-BA* the defined level of IL-2-activity in culture supernatants is much higher, than at the secondary immune response of the primed cells. The marked phenomenon bears witness to the much higher consumption level of IL-2 by *B. abortus* 19-BA LPS-activated B-cells in matching with intact lymphocytes. The research of comitogenic activity of supernatants in other model systems with use of a cleared B-lymphocytes population of the intact mice has shown increase of production of IL-4 and IL-5.

Conclusion: *B. abortus 19-BA* antigens stipulate the amplification of proliferative and synthetic activity of the immunocytes. The implementation of the helper effect of primed T-cells is connected with activation of synthesis at least three mediators: IL-2, IL-4 and IL-5. Probably, the redundant activity of these lymphokines is the reason of expressed allergization and gravity of brucellosis.

P852 Cytokines in Cerebrospinal Fluid (CSF) and Serum in Patients with Bacterial Meningitis

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Cytokines play an important role in inflammatory response. We are interested of its intrathecal and serum levels to gain insight into pathogenesis of bacterial meningitis.

Material and Methods: The CSF and serum levels of interleukin (IL)-1, tumor necrosis factor-α (TNFα), and IL-6 of 12 patients with bacterial meningitis treated in our ICU were analyzed simulta-

neously. Assays were repeated four times: on the first, third, fifth day and two weeks after onset. The ELISA method was employed. The nonparametric statistics was used according to nonnormal distributions (Wilcoxon or Spearman test).

Results: The CSF concentrations of IL-1, IL-6 and TNFα in the first examinations were high and for majority of patients higher then in serum. During the treatment uniform decrease of CSF IL-1, IL-6 and TNFα levels was observed. In serum the significant decrease of IL-6 and TNFα levels were noticed only during the first two days, after that the values didn't change significantly. In CSF we observed correlation between concentration of IL-1 and TNFα ($r = 0.80$, $p < 0.002$), but there were not correlations between CSF and serum concentrations of IL-1, IL-6 and TNF α, behind the correlation between CSF and serum IL-6 concentration ($r = 0.90$, $p < 0.0003$).

Conclusions: In bacterial meningitis we observed acute phase response in CSF expressed by high levels of IL-1, IL-6 and TNFα followed by gradual declining concentrations. Our results show compartmentalisation and dynamics of the inflammatory response.

P853 Neutrophilokine-Inducing Activity of *Yersinia Pestis* Lipopolysaccharide and Its Detoxified Derivatives

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Objectives: of the study was to estimate influence of the *Yersinia pestis* lipopolysaccharide (LPS) detoxification on its neutrophilokine-inducing activity.

Methods: The detoxified derivatives-deacylated LPS (DLPS) and dephosphorylated LPS (LPSP-) were obtained respectively by O-deacylation and dephosphorylation of initial LPS preparation LPS. DLPS and LPSP- were used as inductors of neutrophilokines that mediate macrophage-neutrophil cooperation. Neutrophilokines syntesized by intact and immune peritoneal neutrophiles were obtained. The influence of the obtained cytokines on differentiation of monocytes to macrophages, their killing and chemotactic activities, frequency of phagosome-lysosome fusion in macrophages and distribution of macrophage subpopulations in the total pool of these cells was investigated.

Results: The study has shown that all obtained neutrophilokines, especially those produced by immune neutrophiles, promote the differentiation of monocytes to macrophages, enhance the killing and chemotactic activities of macrophages, increase the frequency of phagosome-lysosome fusion in these cells and induce the redistribution of the macrophage subpopulations in the total pool. Neutrophilokines induced by the detoxified derivatives of LPS, especially DLPS, have been shown the most activity.

Conclusion: These data have shown that the *Y. pestis* LPS detoxification, especially by the method of deacylation, does not lead to decrease in biological, in particular neutrophilokine-inducing activity of these preparations, but actually even increases it. Our results suggest the importance of comprehensive study of *Y. pestis* DLPS as a potencial component of new prophylactic preparations.

P854 Impact of Iron Chelation Therapy on Cellular Immune Effector Function in Cerebral Malaria

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Objectives: Perturbations of cellular iron homeostasis strongly affect cellular immune effector function via iron mediated regulation of cytokine activities (such as interferon-gamma) and macrophage mediated cytotoxicity. Most recently, we could identify an auto-regulatory feedback mechanisms between posttranscriptional regulation of iron metabolism and cellular immune effector function of macrophages via the formation of NO by which activated macrophages are enabled to link maintenance of cellular iron homeostasis with optimal formation of NO for host defence. Recently, iron chelation therapy has been found to exert beneficial effects towards coma duration, parasite clearance and overall survival in children with cerebral malaria.

Methods: To determine whether these effects could be due in part to modulation of the cellular immune response and nitric oxide (NO) formation, we measured serum concentrations of the stable endproducts of NO, nitrite and nitrate (NO_2^-/NO_3^-), IL-4, IL-6, IL-10 and neopterin in 39 Zambian children with cerebral malaria enrolled in a placebo-controlled trial of desferrixamine B (dfo) in addition to quinine.

Results: Mean concentrations of NO_2^-/NO_3^- increased significantly over three days in children receiving dfo plus quinine, but not in those given placebo and quinine. Neopterin levels declined significantly with placebo but not with dfo. IL-4 levels increased progressively in the placebo group and ultimatively decreased in the dfo group but the trend was not statistically significant. IL-6 and IL-10 levels were elevated initially and decreased significantly in both groups over three days, and the effect was more pronounced in children receiving dfo.

Conclusion: Our data are consistent with the hypothesis that iron chelation therapy in children with cerebral malaria strengthens TH-1 mediated immune effector function involving increased production of NO by macrophages.

P855 Nitric Oxide Response of Mouse Macrophages

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Objectives: To determine the nitric oxide (NO) response of mouse peritoneal macrophages against an intracellular pathogen (*Salmonella typhimurium*).

Methods: After establishment cultures from inbred, female BALB's mice. macrophages were incubated overnight with 5% CO_2. Then selected cultures were incubated with non-mutant, human isolated *Salmonella typhimurium* (3×10^8 bacteria/ml), in its live and dead (by heating 30 minutes in 56°C water bath) forms for 30 minutes in 5% CO_2. At the end of incubation, all cultures were washed 3 times with 200 mg/ml gentamycin in RPMI-1640, then all cultures were incubated for 24 hours in control; dead/live bacteria; N-nitro-L-arginine methyl ester (L-NAME); and L-arginine groups and/or in combinations. After 24 hours, nitrite amounts of culture supernatants were determined with Griess reagent at 550 nm. Two fold dilutions of sodium nitric were used to generate a standard curve.

Results: Macrophages incubated with live *Salmonella typhimurium* were produced a high nitrite response of 26 ± 1.2 mmol (control: 1 ± 0.2 mmol) whereas inhibited with L-NAME (14 ± 0.5 mmol) and increased with L-arginine addition to L-NAME (19 ± 0.4 mmol). In dead bacteria groups (control:1 ± 0.3 mmol) nitrite responses were significantly low in bacteria; bacteria + L-NAME; bacteria + L-NAME + L-arginine groups (4.5 ± 0.2; 2.8 ± 0.1; 3.2 ± 0.1 mmol) respectively.

Conclusion: NO response is significantly high in macrophages against **live** *Salmonella typhimuriurn* as an intracellular pathogen. We believe that in future studies on pathogenesis of intracellular pathogens, NO response mechanism(s) and perhaps therapeutic effect(s) would be interesting and important topics.

P856 Lysopaf and Inflammatory Neuronal Diseases

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Objectives: The etherphospholipid lysopaf was investigated in the cerebrospinal fluid (CSF) of patients from the Psychiatric Hospital of the Ludwig-Maximilians University, Munich.

Methods: Lysopaf and lysopaf binding were measured as described (Polonsky et al., 1980; Korth US Patent 5,346,894).

Results: Lysopaf was detected in the CSF (500 μl) from 48 psychiatric patients. 5 patients had inflammatory symptoms. A patient with encephalitis showed 20 ng lysopaf and 299 ng albumin, a patient with inflammatory brain stem symptoms had 5.0 ng lysopaf and 139 ng albumin, a patient with an unclear virus disease showed 4.4 ng lysopaf and 83 ng albumin and a patient with multiple sclerosis showed 6.3 and 8.5 ng lysopaf with 139 and 71 ng albumin. Three patients without symptoms showed 2.9 $\pm$ 1 ng lysopaf with 125 $\pm$ 4 ng albumin ($\pm$1 S.D).

Novel [^{3}H]lysopaf binding sites on neutrophils from healthy male volunteers showed a K_D value of 9.2 nM. The ether group was upregulatory as unlabeled lysopaf or paf (5 nM) but not lysophosphatidylcholine significantly increased [^{3}H]paf binding ($p < 0.001$). PMA (1 nM) also upregulated [^{3}H]paf binding.

Conclusion: Patients with indicated inflammatory cerebral diseases showed elevated CSF levels of lysopaf. An enhanced activity of phospholipases A_2 during inflammatory neuronal disorders could trigger the production of upregulatory lysopaf.

P857 Serum Interferon-γ (IFN-γ) and Interleukin 10 (IL-10) in Acute Cytomegalovirus Infection

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Cytomegalovirus (CMV) infection is reported to cause transient immunosuppression in man. Our study aimed at finding out whether acute CMV infection in children is associated with disturbed serum IFN-γ and IL-10 levels.

The studies were performed on 15 patients, aging 10–16 years, manifesting clinical symptoms of acute viral infection and carrying serologically demonstrable IgM-anti-CMV antibodies (VIDAS CMV IgM, bioMerieux). Cytokine levels were established in serum using Quantikine™ human IFN-γ immunoassay (R and D Systems) for IFN-γ and Endogen human IL-10 ELISA for IL-10. In all examined children of the group IL-10 level was 68.2 $\pm$ 12.2 pg/ml and did not significantly differ from values obtained in the control group of healthy children ($p > 0.05$). On the other hand, serum IFN-γ was below the detection level in 14 patients with acute CMV infection and in a single case where it was detected it corresponded to the control level.

The results indicate that acute CMV infection is accompanied by a selectively decreased secretory activity of Thl lymphocytes, as expressed in the absence of IFN-γ response.

P858a Interferon Status during Antigen-Induced Arthritis

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Objectives: High levels of interferon-γ (IF-γ) is known to inhibit the growth of *C. trachomatis*, but low level – to induce the development of morphologically abnormal intracellular forms because of indolamine-2,3-dioxygenase induction and tryptophane pool decrease. It was the cause of our study of the importance of the interferon status (IFS) for diagnostic and treatment of antigen-induced arthritis (AIA).

Methods: IFS (i.e. general serum IF (sIF) content, the level of induced production of IF-α/β and IF-γ (induction of IF-α/β, -γ)) of 25 chronic chlamidial AIA patients was tested by bioassay.

Results: All the patients were noticed to have the increased sIF up to 23.3 $\pm$ 4.5 IU/ml (vs. 4.5 $\pm$ 2.8 IU/ml of normal, $p < 0.05$) and significant IF-γ induction decrease (up to 22.0 $\pm$ 1.7% of normal, $p < 0.05$). After combined course of sumamed and cycloferon (low-molecular IF inducer) we've got the remission of 18 patients (normalization of acute-phase indices, increase of IF-γ induction up to 47.2 $\pm$ 4.9% of normal, $p < 0.01$). 18 patients had *C. trachomatis* eliminated in a month after the end of therapy, and 22 ones – two months later.

Conclusion: The positive clinical effect and high percentage of *C. trachomatis* elimination were noticed during combined usage of antibiotic (sumamed) and IF inducer (cycloferon). Increase of IF-γ induction shows normalization of IF system and recovery of non-specific resistance potential. IFS research allows to correct diagnosis, to evaluate therapy efficacy, to predict the outcome of a disease.

P858b Interferon Status for Viral Hepatitis Outcome Prognosis

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Objectives: Disease outcome prognosis with IF status (IFS) research.

Methods: IFS that includes general serum IF (sIF) content and the evaluation of the induced production of IF-α/β and IF-γ by leucocytes in vitro (induction of IF-α/β, -γ) was tested by bioassay. Clinical observation was carried out with 19 acute viral hepatitis C patients. IFS research was performed before therapy, after Retrovir (AZT) course and 3 months later.

Results: All treated patients grouped; gr. 1 with positive clinical dynamics (8) and gr. 2 without that (11); IFS of gr. 1 before treatment was characterised with increased sIF (up to 31.0 $\pm$ 3.6 IU/ml) and decreased IF-α/β, -γ induction (27.6 $\pm$ 4.2% and 16.1 $\pm$ 2.0% of normal values respectively). IFS improvement was ascertained after therapy finished and in 3 months: decrease of sIF (to 22.5 $\pm$ 2.7 IU/ml and 21.3 $\pm$ 1.8 IU/ml), increase of induction of IF-α/β (to 37.1 $\pm$ 4.8% and 43.8 $\pm$ 8.6%) and IF-γ (to 27.0 $\pm$ 6.2% and 39.1 $\pm$ 6.2%). In gr. 2 the significant changes of IFS were not noted (before, after, in 3 months): 23.0 $\pm$ 4.9, 19.3 $\pm$ 2.6 u 18.3 $\pm$ 3.5 IU/ml for sIF; 39.7 $\pm$ 4.8, 34.2 $\pm$ 2.6, 42.0 $\pm$ 6.4% for IF-α/β; 54.8 $\pm$ 6.7, 49.8 $\pm$ 4.7 24.1 $\pm$ 6.7 for IF-γ.

Conclusions: The group with promoted outcome (1) had initially higher sIF that corresponds to lower IF-α/β, -γ induction values. Further sIF was decreasing and IF-α/β, -γ induction was recovering. In gr. 2 (with initially lowered IF system activity) the depression of IF-α/β, -γ induction progressed that correlated with pathology aggravating. Doing research of IF status, we've got the complementary instrument for choice of treatment way, therapy efficacy evaluation and the possible disease outcome prognosis.

P859 IFNα-Induced Antiviral MxA Protein in Patients with Vital Diseases

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Objectives: We studied the levels of the intracellular IFNα-induced

antiviral MxA protein in patients with viral diseases and in clinically stable patients with HIV-1 infection grouped according to the 1993 classification of the CDC.

Methods: The quantification of MxA protein was performed in whole blood lysates by an immuno-chimiluminescent assay (Ciba Corning Diag. Corp.).

Results: The mean ± SD levels of MxA were 7 ± 7 ng/ml in 30 healthy volunteers and 12 ± 8 ng/ml in 15 patients with various bacterial infections ($p > 0.1$ vs controls). The levels of MxA protein were significantly higher in blood cells of patients with various viral infections (53 ± 79 ng/ml, $p = 0.001$, $n = 27$). Increased levels of MxA protein were found in patients with HIV-1 infection; however, a large range of values were obtained in each group of patients; 2 to 149 ng/ml in group A (37 ± 45, $p < 0.001$, $n = 10$), 1 to 185 ng/ml in group B (22 ± 40, $p = 0.02$, $n = 21$) and 4 to 180 ng/ml in group C (35 ± 51, $p = 0.002$, $n = 7$). The variations of MxA in each group were not associated with the number of CD4 T cells in peripheral blood. We found no correlation between the MxA levels and the log HIV-1 RNA copy number in plasma (Amplicor, Roche) in 39 HIV-1 positive patients. In IFN α-untreated HCV+ patients the MxA levels were not significantly different than the controls ($p > 0.1$, $n = 8$). In IFN α-treated HCV+ patients the MxA levels were higher than those of controls (126.7 ± 64.7ng/ml, $p < 0.001$, $n = 5$).

Conclusion: Our results showed that the quantitation of MxA protein may be useful for the diagnosis of the viral diseases and the follow up of the IFNα-treatment of VHC+ patients.

P860 Monitorization of Interferon-α Treatment in Patients with Chronic Hepatitis C

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Objective: Chronic hepatitis C virus (HCV) infection is a progressive disease that can lead to cirrhosis. Interferon-α (IFN-α) trials in patients with chronic hepatitis C reported the efficacy of the therapy by means of serum ALT levels and the improvement of liver histological findings. Currently we have a controlled trial in patients with chronic HCV infection.

Methods: In the monitorization of the evolution has been employed biochemical markers, pathological findings (Knodell index), quantitative determination of HCV antibodies to synthetic peptides (Innolia, Innogenetics), detection of HCV RNA viremia by RT-PCR assay (Amplicor) and determination of genotypes by lineal probe assay (Innolipa, Innogenetics).

Results: At this moment, 43 patients have completed the treatment. After six months of therapy end, 10 patients (23.2%) show a complete remission in biochemical and pathological parameters, although one patient had HCV viremia at the end of the treatment. Four patients had an incomplete response. Twenty-nine patients were non responders; of them, 10 were maintaned in reinduction. At the end of the retreatment six of them showed a complete remission and four an incomplete response. Genotypes were determined in 29 patients: 23 patients were identified as being infected with type 1b, 2 patients with type 1a, 2 patients with type 3a, and one with type 4. In one case, it was detected a coinfection 1a + 1b.

Conclusions: We found that detection of serum HCV RNA is the best technique to predict the final outcome of HCV-infected patients after IFN therapy, because we have found a correlation between HCV RNA viremia and clinical evolution during follow-up.

Epidemiology of bacteremia and of nosocomial infections

P861 Computer-Assisted Infection Monitoring (CAI) in ICU

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Objectives: Diagnosis and therapy of nosocomial infections require an efficacious management of a great amount of data. In the past decade, computerized surveillance systems (1), making decisions automatically, were developed.

Methods: CAI is an interactive program delivering data from clinical monitoring, microbiologic cultures and laboratory values. CAI asks the physician to evaluate the relevance of the data according to the Criteria of CDC (2). Thus diagnosis and therapy are defined by the physician but not automatically generated by the computer program itself. In a third step CAI double-checks the decision given by the physician with the available data. Is there any mistake, alerts are automatically generated. In addition the program indicates the kind of antibiotic treatment (empiric, calculated, specific or prophylactic).

Connecting clinical and microbiologic data with medical decisions CAI allows an evaluation of epidemiologic data with regard to prescribing patterns and cost development.

Discussion: CAI may contribute to standardization of diagnostic and therapeutic procedures in nosocomial infection. It facilitates diagnosis and treatment but doesn't renounce the specific medical decision. This is an important advantage of CAI compared with former infection surveillance systems.

References

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P862 Doctors are Falsely Comforted by Unvalidated Data on Infection Rates – Practical Suggestions on What to Do

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Objectives: To validate routine surveillance of surgical wound infections. To test methods on how to improve the relevance, simplicity and quality of registration.

Methods: Two consecutive bedside prevalence surveys were made by the same infection control nurse in 15 different surgical and gynaecological departments. The results were compared to the electronic routine incidence surveillance system of the hospital.

To improve the clinical relevance of the surveillance in eight surgical departments other complications were included. Different methods of registration, such as only prevalence surveys, selective registration, follow up after discharge, and optimizing the use of administrative systems are tested.

Results: The prevalence survey showed that 4.6% of the patients had a deep surgical wound infection and additional 4.6% had a surperficial infection. However only one third of these infections were recorded in the hospital routine surveillance system. Preliminary results indicate that hospital acquired infections makes up only a small fraction of even serious complications to traditional surgical treatments.

Conclusions: Registrations needs to be validated before comparisons. Clinical guidance based on unvalidated data can be serously